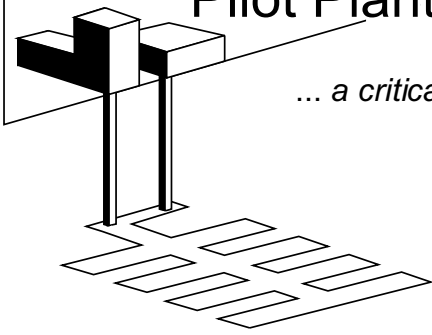


Waste Isolation

Pilot Plant



... a critical step toward solving the nation's nuclear waste disposal problem

Why Salt Was Selected As a Disposal Medium

Government officials and scientists chose the Waste Isolation Pilot Plant (WIPP) site through a selection process that started in the 1950s. At that time, the National Academy of Sciences conducted a nationwide search for geological formations stable enough to contain wastes for thousands of years. In 1955, after extensive study, salt deposits were recommended as a promising medium for the disposal of radioactive waste. Since then, bedded salt has been one of the leading candidates for the permanent disposal of radioactive waste.

Why is salt the material of choice for the planned disposal of some nuclear waste? Are there advantages to rock salt?

Salt offers the following advantages:

- Most deposits of salt are found in stable geological areas with very little earthquake activity; assuring the stability of a waste repository.
- Salt deposits demonstrate the absence of flowing fresh water that could move waste to the surface. Water, if it had been or were present, would have dissolved the salt beds.
- Salt is relatively easy to mine.
- Rock salt heals its own fractures because of its plastic quality. That is, salt formations will slowly and progressively move in to fill mined areas and safely seal radioactive waste from the environment.

Salt formations at WIPP were deposited in thick beds during the evaporation of an ancient ocean; the Permian Sea. These geologic formations consist mainly of sodium chloride rock, the same substance that, in granular form, is in a salt shaker. The primary salt formation containing the WIPP mine is about 2,000 feet thick, beginning 850 feet below the surface.

Formed about 250 million years ago during the Permian Age, large expanses of uninterrupted salt beds provide a repository free from the disturbances of large earthquakes. That proven stability over such a long time span offers the predictability that the salt will remain stable for a comparatively short quarter million years. That's about how long the WIPP-bound waste will take to lose most of its harmful radioactivity and no longer be a threat to human health and the environment.

At the depth of the WIPP repository, the salt will slowly encapsulate the buried waste in the stable rock. Relatively small amounts of brine, salt-saturated water, were trapped in the formation millions of years ago. Moisture and salt molecules in the brine will help the crystallization process to naturally encapsulate the waste in the salt. Meanwhile, salt rock also provides shielding from radioactivity similar to that of concrete.



U.S. Department of Energy
Carlsbad Field Office
The Waste Isolation Pilot Plant

printed on  recycled paper

For more information:

<http://www.wipp.ws> or call 1-800-336-WIPP

Contact:
DOE/CBFO Office of Public Affairs
P.O. Box 3090
Carlsbad, NM 88221 (505) 234-7352

WTS Communication Communication
P.O. Box 2078
Carlsbad, NM 88221 (505) 234-7207

Rev. January 2003